

REMARKS/ARGUMENTS

Claims 21-27 and 29-59 are pending, claims 29-32 and 40-43 having been withdrawn from consideration. By this Amendment, claims 21, 22, 27, 29, 30, 40 and 41 are amended. Support for the amendments to claims 21, 22, 27, 29, 30, 40 and 41 can be found, for example, in original claims 21, 22, 27, 29, 30, 40 and 41. No new matter is added. In view of the foregoing amendments and following remarks, reconsideration and allowance are respectfully requested.

Information Disclosure Statement

Applicants thank the Examiner for the indication in the initialed Form PTO-1449 attached to the Office Action that the Smith reference has been considered.

Applicants note, however, that the initialed Form PTO-1449 still does not include an indication that the references JP 62-114985 and DE 102 46 140, cited in the June 22, 2005 Information Disclosure Statement, have been considered by the Examiner.

The Office Action asserts that the discussion of DE 102 46 140 in the present specification at pages 2 and 6 does not constitute a "discussion of the content of the cited reference." *See* Office Action, page 4. Applicants note that a "discussion of the content" of a reference is not required, but rather a "concise explanation of relevance." *See* MPEP §609.04(a).III. However, for the Examiner's convenience, a copy of U.S. Patent Application Publication No. US 2005/0281765, which is an English-language equivalent of DE 102 46 140 is attached hereto.

The Office Action asserts that JP 62-114985 "is not cited or discussed in the ISR." *See* Office Action, page 4. Applicants have attached a copy of March 4, 2004 International Search Report. JP 62-114985 is plainly identified as the second "X" reference on the second

page 2 of the International Search Report and, again, as the fifth reference on page 3 of the International Search Report. As indicated in the MPEP:

Where the information listed is not in the English language, but was cited in a search report or other action by a foreign patent office in a counterpart foreign application, the requirement for a concise explanation of relevance can be satisfied by submitting an English-language version of the search report or action which indicates the degree of relevance found by the foreign office. This may be an explanation of which portion of the reference is particularly relevant, to which claims it applies, or merely an "X", "Y", or "A" indication on a search report.

See MPEP §609.04(a).III (emphasis added).

In view of the foregoing, Applicants respectfully request that the Examiner consider of each of the cited references, indicate such consideration on the attached Form PTO-1449, and return the initialed form to the undersigned.

Withdrawn Claims

For the reasons set forth below, Applicants submit that all pending claims presently subject to examination are in condition for allowance. Because the withdrawn claims depend from, and thus recite all features of, allowable claims subject to allowance, rejoinder and allowance of the withdrawn claims are respectfully requested.

Priority Claim

The Office Action asserts that "English translation of a priority document must be submitted when require [sic] by the examiner." See Office Action, page 5. The MPEP states that:

The only times during ex parte prosecution that the examiner considers the merits of an applicant's claim of priority is when a reference is found with an effective date between the date of the foreign filing and the date of filing in the United States and when an interference situation is under consideration.

MPEP §201.15. As the Office Action asserts that each of the applied references is available under 35 U.S.C. §102(b), Applicants are uncertain of why the Examiner would be considering the merits of Applicants' priority claim. However, 37 C.F.R. 1.55(4)(i)(C) states that "[a]n English language translation of a non-English language foreign language application is not required except ... [w]hen specifically required by an Examiner." Applicants note that neither the current Office Action nor the previous Office Action explicitly requests that an English-language translation of the present application be provided. If the Examiner would like to receive an English-language translation, he is requested to explicitly indicate such in the next Patent Office communication.

Objection to the Claims

The Office Action objects to claims 21-27, 33-39 and 44-59 as reciting non-elected subject matter. Applicants note that claims 21-27, 33-39 and 44-59 are directed to both elected and non-elected Markush alternatives. Applicants respectfully request that, upon allowance of the elected subject matter, the non-elected subject matter be rejoined and examined.

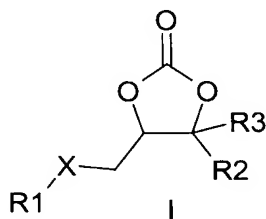
Rejection Under 35 U.S.C. §112, Second Paragraph

The Office Action rejects claims 21-27, 33-39 and 44-59 as indefinite under 35 U.S.C. §112, second paragraph. Applicants respectfully traverse the rejection.

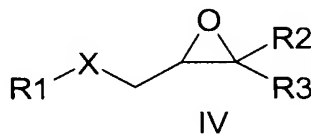
The Office Action asserts that several aspects of the language of the present claims renders the claims indefinite. The Office Action asserts that the recitation "n has various numerical values," is indefinite. *See* Office Action, page 2. While Applicants do not necessarily agree with this assertion, by this Amendment, claims 21, 22, 27, 29, 30, 40 and 41 are amended to obviate the rejection.

With respect to "n" the Office Action further asserts that "when n is 1-5 as defined in claim 21, n-C₅H₁₁ would be -4 to 0. It is not possible for C₅H₁₁ to have negative or zero molecules." *See* Office Action, page 2. One of ordinary skill in the art would understand that the definition of the subscript "n" in claim 21 does not apply to the term "n-C₅H₁₁" in claim 26. One of ordinary skill in the art would appreciate that the prefix "n" in "n-C₅H₁₁" indicates that the C₅H₁₁ alkyl group is a linear alkyl group.

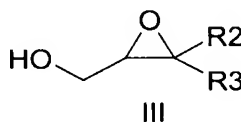
The Office Action asserts that recitation of the degree of branching recited in the present claims renders the claims unclear and confusing. *See* Office Action, page 2. Claim 21, for example, recites that "the substituent R¹ has an average degree of branching which is defined as (number of methyl groups per molecule)-1 of from 0.2 to 1.6." As discussed previously, this phrase indicates that the residue R¹ is branched. The recited alkylglycidol carbonates of formula I



are prepared, for example, by method a) or method b) described at page 4, line 20 to page 7, line 1 of the present specification. According to such methods, the key intermediate is an epoxide of formula IV,



which is prepared from an epoxide of formula III



by reaction with suitable alcohols, thiols, alcohols reacted with alkylene oxides, amines, carboxylic acids or carboxamides to introduce the residue R^1 . See present specification, page 5, lines 29 to 31. As is apparent from these reaction schemes, the branching degree of the alkyl residue R^1 of the alcohol, thiol, alcohol reacted with alkylene oxide, amine, carboxylic acid or carboximide is identical to the branching degree of the residue R^1 in the resulting alkylglycidol carbonate of formula I. That is, if the epoxide of formula IV is prepared by reaction with isomeric mixtures of alcohols having identical numbers of carbon atoms but different degrees of branching, the obtained alkylglycidol carbonate or mixture thereof would have substituents R^1 having the same average degree of branching as the alcohol. One of ordinary skill in the art could readily determine whether or not a particular compound has the degrees of branching recited in the present claims.

The Office Action again asserts that, because the required branching arises from the use of technical grade alcohols, and that because such alcohols are acquired, the recited branching has no patentable significance. See Office Action, page 2. As discussed previously, the definiteness of, e.g., claim 21, is determined based on the discernability of the structure of the recited alkylglycidol carbonate or mixture of alkylglycidol carbonates, not the commercial availability of the reactants used to prepare the alkylglycidol carbonate or mixture of alkylglycidol carbonates. If this rejection is to be repeated, the Examiner is requested to explain how this is germane to the issue of whether the metes and bounds of the present claims are clear. Applicants submit that the patentable significance of the degrees of branching recited in the present claims is discussed below with reference to the rejections under 35 U.S.C. §103.

The Office Action asserts that the exclusionary clause in claim 21 is redundant because the excluded compound is not otherwise encompassed by claim 21. See Office Action, page 3. Applicants respectfully disagree. In the excluded alkylglycidol carbonate,

the residue R is CH₂-O- CH(CH₃)₂. This compound is obtained if X is O and R¹ is CH(CH₃)₂. In such a case the degree of branching (number of methyl groups per molecule)-1 is 1. Accordingly, the exclusionary clause is necessary to preserve the claim scope sought by Applicants.

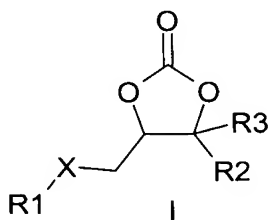
For the foregoing reasons, claims 21-27, 33-39 and 44-59 are definite. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

Rejection Under 35 U.S.C. §103

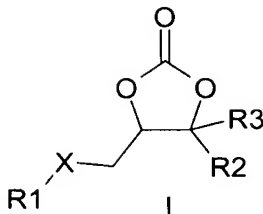
A. Horibe

The Office Action rejects claims 21-27, 33-39 and 44-59 under 35 U.S.C. §103(a) over JP 2001-300286 to Horibe et al. ("Horibe") in view of U.S. Patent No. 3,320,174 to Rubinfeld ("Rubinfeld"), WO 97/04059 to Durbut et al. ("Durbut 059"), WO 98/00418 to Durbut et al. ("Durbut 418"), and U.S. Patent No. 5,994,290 to Potthoff-Karl et al. ("Potthoff-Karl"). Applicants respectfully traverse the rejection.

Claim 21 recites "[a]n alkylglycidol carbonate or mixture of two or more alkylglycidol carbonates of the formula I



in which the symbols X, R¹, R² and R³ have the following meanings: R¹ is an unsubstituted C₃-C₂₉-alkyl group or an unsubstituted C₃-C₂₉-alkenyl group, wherein the substituent R¹ has an average degree of branching which is defined as (number of methyl groups per molecule)-1 of from 0.2 to 1.6 ... (emphasis added). Claim 27 recites "[a]n alkylglycidol carbonate or mixture of two or more alkylglycidol carbonates of the formula I



in which the symbols X, R¹, R² and R³ have the following meanings: R¹ is an unsubstituted C₃-C₂₉-alkyl group or an unsubstituted C₃-C₂₉-alkenyl group, wherein the substituent R¹ has an average degree of branching which is defined as (number of methyl groups per molecule)-1 of from 0.2 to 1.6 ..." (emphasis added). The cited references do not disclose or suggest such alkylglycidol carbonates or mixtures of alkylglycidol carbonates.

As indicated above, claims 21 and 27 require that the substituent R¹ has an average degree of branching of from 0.2 to 1.6. The Office Action concedes that, in each of the compounds disclosed in Horibe, the substituent corresponding to R¹ in formula I of claims 21 and 27 is linear. See Office Action, page 3. That is, the alkylglycidol carbonates of Horibe do not have substituents corresponding to R¹ in formula I that are branched at all, much less with an average degree of branching of from 0.2 to 1.6, as recited in claims 21 and 27.

Notwithstanding the structural differences outlined above, the Office Action asserts that it would have been obvious to modify the compounds of Horibe to obtain the alkylglycidol carbonates and mixtures thereof of claims 21 and 27. See Office Action, pages 4 to 5.

As discussed previously, the amount of branching in the alkyl residue in formula I of claims 21 and 27 does not result by the mere chance of structure of the alcohols used in synthesis. Rather, the amount of branching is selected to provide a particular technical effect. Specifically, as shown in the present specification, the branching degree of the residue R¹ in the alkyl glycidol carbonates of formula (I) allows the compounds or mixtures thereof to

demonstrate good effectiveness as cosurfactants, and, because the degree of branching is not very high, good an environmental compatibility. *See, e.g.*, present specification, page 3, lines 15 to 18, pages 31 to 32. As is well-settled, a particular parameter must first be recognized as a result-effective variable before the determination of workable ranges can be said to be an obvious variation. *See, e.g.*, MPEP §2144.05.II.B (citing *In re Antonie*, 195 U.S.P.Q. 6 (C.C.P.A. 1977)). The Office Action fails to identify, in Horibe, or any other cited reference, recognition that the degree of branching in an alkyl residue of an alkylglycidol carbonate or mixture thereof is a result-effective variable. Absent such recognition, one of ordinary skill in the art would not have had a reasonable expectation of success upon manipulating the degree of branching, as asserted by the Office Action. A proposed modification or combination must be supported by a "reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does." *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (U.S. 2007).

As discussed above, the alkylglycidol carbonates and mixtures thereof of claims 21 and 27 provide highly efficient cosurfactants having a good environmental compatibility. Horibe fails to disclose or suggest compounds or mixtures of compounds, as recited in claims 21 and 27, which include alkylglycidol carbonates according to formula I, having a group X including a heteroatom, and having a branched residue R¹ having an average degree of branching of from 0.2 to 1.6. Moreover, there is nothing in Horibe that would lead a skilled artisan to modify the alkylglycidol carbonates disclosed therein to obtain the compounds or mixtures of compounds of claims 21 and 27.

Each of Rubinfeld, Durbut 059, Durbut 418 and Potthoff-Karl is cited for its alleged disclosure of surfactant/detergent compositions. However each of Rubinfeld, Durbut 059, Durbut 418, Potthoff-Karl, like Horibe, fails to disclose or suggest alkylglycidol carbonates or mixtures of alkylglycidol carbonates according to formula I in which the substituent R¹ has

an average degree of branching of from 0.2 to 1.6. Accordingly, the combination of references fails to disclose or suggest each and every feature of claims 21 and 27.

As explained, claims 21 and 27 would not have been rendered obvious by Horibe, Rubinfeld, Durbut 059, Durbut 418 and Potthoff-Karl. Claims 22-26, 33-39 and 44-59 depend variously from claims 21 and 27 and, thus, also would not have been rendered obvious by Horibe, Rubinfeld, Durbut 059, Durbut 418 and Potthoff-Karl. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

B. Mouloungui

The Office Action rejects claims 21-27, 33-39 and 44-59 under 35 U.S.C. §103(a) over Mouloungui et al., Eur. J. Lipid Sc. Tech. 2001 Vol. 103(4), pp. 216-212 ("Mouloungui") in view of Rubinfeld, Durbut 059, Durbut 418 and Potthoff-Karl. Applicants respectfully traverse the rejection.

As discussed previously, and conceded in the Office Action, in each of the compounds disclosed in Mouloungui, the substituent corresponding to R¹ in formula I of claims 21 and 27 is linear. That is, the alkylglycidol carbonates of Mouloungui do not have substituents corresponding to R¹ in formula I that are branched at all, much less with an average degree of branching of from 0.2 to 1.6, as recited in claims 21 and 27. Accordingly, for the reasons discussed above with respect to the rejection over Horibe, Rubinfeld, Durbut 059, Durbut 418 and Potthoff-Karl, the combination of Mouloungui, Rubinfeld, Durbut 059, Durbut 418 and Potthoff-Karl fails to render obvious claims 21 and 27.

As explained, claims 21 and 27 would not have been rendered obvious by Mouloungui, Rubinfeld, Durbut 059, Durbut 418 and Potthoff-Karl. Claims 22-26, 33-39 and 44-59 depend variously from claims 21 and 27 and, thus, also would not have been

rendered obvious by Mouloungui, Rubinfeld, Durbut 059, Durbut 418 and Potthoff-Karl.
Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

C. Tashiro

The Office Action rejects claims 21-27, 33-39 and 44-59 under 35 U.S.C. §103(a) over JP 1991-03065232 to Tashiro et al. ("Tashiro") in view of Rubinfeld, Durbut 059, Durbut 418 and Potthoff-Karl. Applicants respectfully traverse the rejection.

As discussed previously, and conceded in the Office Action, in each of the compounds disclosed in Tashiro, the substituent corresponding to R¹ in formula I of claims 21 and 27 is linear. That is, the alkylglycidol carbonates of Tashiro do not have substituents corresponding to R¹ in formula I that are branched at all, much less with an average degree of branching of from 0.2 to 1.6, as recited in claims 21 and 27. Accordingly, for the reasons discussed above with respect to the rejection over Horibe, Rubinfeld, Durbut 059, Durbut 418 and Potthoff-Karl, the combination of Tashiro, Rubinfeld, Durbut 059, Durbut 418 and Potthoff-Karl fails to render obvious claims 21 and 27.

As explained, claims 21 and 27 would not have been rendered obvious by Tashiro, Rubinfeld, Durbut 059, Durbut 418 and Potthoff-Karl. Claims 22-26, 33-39 and 44-59 depend variously from claims 21 and 27 and, thus, also would not have been rendered obvious by Tashiro, Rubinfeld, Durbut 059, Durbut 418 and Potthoff-Karl. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

D. Kawabata

The Office Action rejects claims 21-27, 33-39 and 44-59 under 35 U.S.C. §103(a) over JP 1985-60228472 to Kawabata et al. ("Kawabata") in view of Rubinfeld, Durbut 059, Durbut 418 and Potthoff-Karl. Applicants respectfully traverse the rejection.

As discussed previously, and conceded in the Office Action, in each of the compounds disclosed in Kawabata, the substituent corresponding to R¹ in formula I of claims 21 and 27 is linear. That is, the alkylglycidol carbonates of Kawabata do not have substituents corresponding to R¹ in formula I that are branched at all, much less with an average degree of branching of from 0.2 to 1.6, as recited in claims 21 and 27. Accordingly, for the reasons discussed above with respect to the rejection over Horibe, Rubinfeld, Durbut 059, Durbut 418 and Potthoff-Karl, the combination of Kawabata, Rubinfeld, Durbut 059, Durbut 418 and Potthoff-Karl fails to render obvious claims 21 and 27.

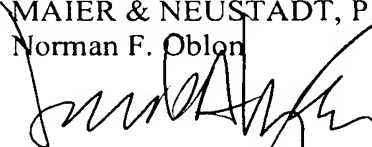
As explained, claims 21 and 27 would not have been rendered obvious by Kawabata, Rubinfeld, Durbut 059, Durbut 418 and Potthoff-Karl. Claims 22-26, 33-39 and 44-59 depend variously from claims 21 and 27 and, thus, also would not have been rendered obvious by Kawabata, Rubinfeld, Durbut 059, Durbut 418 and Potthoff-Karl. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

Conclusion

For the foregoing reasons, Applicants submit that claims 21-27 and 29-59 are in condition for allowance. Prompt reconsideration and allowance are respectfully requested.

Respectfully submitted,

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Attachment:

June 22, 2005 Form PTO-1449
U.S. Patent Application Publication No. US 2005/0281765
March 4, 2004 International Search Report